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ABSTRACT

A review of the context of vocational education reform highlights historical efforts implemented through legislation requirements in 46 states within some vocational teacher education programs that are consistent with current reform recommendations. Current recommendations include the Holmes Group and the Carnegie Commission proposals for restructuring teacher education. These proposals emphasize strategies for improving the quality of teachers, teaching, and the teaching profession. Three alternative models for the delivery of vocational teacher education identify their relationship to the goals of educational reform: (1) a restricted baccalaureate model; (2) a post-baccalaureate model; and (3) a field-based model for recruiting and inducting nontraditional vocational teachers. Several activities must support the three models of delivery to meet the challenges of reform: (1) creation of a vocational education and teacher education leadership development institute; (2) active recruitment, preparation, and support of minorities; and (3) ensuring that all tenured vocational education teachers meet minimum requirements. Further research activities include: (1) creating a national commission to investigate alternative delivery models; (2) updating the vocational education knowledge base; and (3) exploring the feasibility of differentiated staffing pattern for vocational education teachers. Twelve references and 11 pages of materials to reproduce are provided. (NLA)

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VOCATIONAL EDUCATION TEACHING ALTERNATIVES
Models for the Delivery of Vocational Teacher Education

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VOCATIONAL EDUCATION TEACHING ALTERNATIVES

Lyndon B. Johnson's message to Congress in 1965 is most appropriate for today's education reform. He stated, "the three R's of our school system must be supported by the three T's--teachers who are superior, techniques of instruction that are modern, and thinking about education which places it first in all our plans and hopes." The need for superior teachers is just as severe today as it was over two decades ago, and determining ways to increase teacher effectiveness has lead vocational teacher educators to study alternatives for the preparation of vocational teachers.

Eleven years from now, the "nation at risk" will enter into the 21st century with dramatic changes in its education system. It is apparent that the broad system of education and teacher prepartion is in desperate need of reform. The history of vocational education in the public schools extends back over 70 years to the passage of the Smith-Hughes Act. It can be suggested that the basic structure used to prepare vocational teachers has changed very little in that time when compared to the changes that will likely occur before the next century.

The redesign of vocational teacher education is an inevitable result of the emphasis on the reform of education. While strategies and models for restructuring of teacher education have been proposed and evaluated, few have directed specific attention to vocational education.

Analysis of the reform movement completed within vocational teacher education suggests a distinct reponse rather than the acceptance of delivery models proposed for teacher education generally. (See, for example, the May, 1987 issue of the Vocational Education Journal). The need for specific vocational teacher education models is premised on the uniqueness in the historic roots of vocational education as well as its philosophy and goals, and the requirements deemed critical for effective vocational teaching.

According to Adams (1987) vocational teacher education have been under pressure in the past several years as the result of a decline in the number of faculty, students, and state and university financial support. In order to be effective in that environment, the immediate reform of vocational teacher education must have several pragmatic qualities. First it must be structured in a way that it can be reasonably implemented by the personnel and the institutions currently providing vocational teacher education. Second it cannot require a significant allocation of additional financial or personnel resources. Third, it cannot dramatically restrict the sources or number of prospective vocational education teachers.

This paper will review the context of reform as it relates to vocational education. In addition to recognizing the uniqueness of vocational education, it will highlight historic efforts that have been implemented within some vocational teacher education programs that are consistent with current reform recommendations. Alternative models for the delivery of

vocational teacher education will be outlined with an analysis of their relationship to the goals of educational reform.

THE CONTEXT OF EDUCATIONAL REFORM

In order to understand and effectively respond to the educational reform movements, the underlying causes of concern that led to a study of education must be analyzed. Without that analysis, it is possible for reform efforts to be directed toward different outcomes than were intended by those who studied the U. S. education system.

It is clear that attention has now moved beyond the initial concerns which were deemed critical in the early reports on the status of education. Much of the focus is now directed at an analysis of the many reform proposals. It is easy to lose sight of the original rationale as new proposals for reform are designed and critiqued. Symptoms may become viewed as problems and serve as the basis for designing treatments. In that case, the outcomes of reform will likely result in changes in the process of education and possible the outcomes of education. However, those changes may not address the problems which initially raised the concern about the quality of education.

Such may be the case in some reform efforts proposed and initiated in elementary/secondary education and in teacher education. Those efforts are directed at program structures, academic performance measures, and the role requirements and standards for teachers and teacher educators. If effective, the reforms should result in new structures, higher academic performance on the specified measures, and revised roles for

educators as intended. Whether the results affect the primary causes of the initial reform movement needs to be carefully considered.

EDUCATION AND SOCIAL/ECONOMIC GOALS

The history of education in the United States during this century suggest that education is viewed in close context with the economic/social condition of the country. Education is one of the primary resources for social and economic changes and improvement. When the American society has experienced difficulties in either arena, education has typically been evaluated to determine its contribution to the identified difficulties or to fashion a solution to the problem through the nation's education system.

Examples of the interrelationship between education and the economic environment are: (1) using of the higher education system as a method of incorporating returning military personnel into society at the end of World War II, Korean and Vietnam wars; (2) the emphasis on science, technology, and foreign languages that was introduced at the end of the 1950's when the United States entered the "space race"; (3) the development of special education, basic education, and job training programs during the 1960's and 1970's when the unique needs of disadvantaged and handicapped persons were recognized and emphasized; and (4) the expansion of high school degree equivalency programs in that same time period when it was apparent that people were prevented from becoming highly productive citizens as a result of the lack of a diploma.

Education as an element of social change is just as apparent. The adjustments necessary as the country moved from an agricultural to an industrial economy, from a rural to an urban society were accomplished with significant support from the country's educational system. The complex issues of infusion of immigrants, racial integration, and changing social values have been addressed through education.

THE BASIS OF REFORM EFFORTS

The 1980's have seen a critical analysis of the social and economic condition of the United States. The traditional industrial base of the economy deteriorated and faced intense competition from foreign businesses. As documented by Riche (1988), Wirth (1987), and others, the employment base is gradually shifting from a highly-paid manufacturing work force to a service-dominated economy which offers a lower wage range and few opportunities for the use of existing skills. Analyses such as America's Competitive Challenge (Business/Higher Education Forum, 1983) define critical problems facing American businesses. Productivity levels of business have stabilized or declined after a history of increases. Excess productive capacity exists in many companies and industries while markets are being satisfied by foreign suppliers.

Changes have also occurred in the social environment of the country. Questions about ethics and morality have been raised as a result of the actions of business people and government and religious leaders. Some point to a general decline in concern about morality with segments of the United States population.

The changing status and roles of women as well as ethnic and racial minorities have had significant social impact. The composition of the work force, the distribution and use of the country's resources, and methods of family management have undergone changes.

Because the country is no longer in the dominant world position of economic power, and because of the concerns about the quality of life in the country, people have attempted to identify reasons for the changes and to propose solutions. The American education system has been identified as a part of the reason for the problems facing the country and has been challenged to respond with radical changes (National Commission on Excellence in Education, 1983).

THE EDUCATION REFORM MOVEMENT

It must be recognized that education has not been singled out as the cause of the country's problems or as the only source of a solution. But because of the significant impact and pervasive influence of education on U.S. society, it has been carefully scrutinized. That scrutiny has resulted in the documentation of a decline in educational performance and significant underachievement in preparing teachers for the tasks perceived as critical to the nation's future. McMurran (1963) expressed the feelings of many when he said, "The blunt fact is that many of our teachers are not properly qualified to handle the responsibility we have place on them...This is, in my view the major weakness of American education." (p.)

While informal concern about the quality of education in America has been expressed for some time, the 1983 release of A Nation at Risk, the report of the national Commission on Excellence in Education, moved the concern to the top of the national, state, and local agendas. In addition to that report, numerous others have called for major reform in the goals, design, delivery, and evaluation of education and teacher preparation. Of the reports some of those receiving the most attention are Action for Excellence, Task Force on Economic Growth, 1983; High School: A Report on Secondary Education in America, Boyer, 1983; America's Competitive Challenge, Business/Higher Education Forum, 1983; and High Schools and the Changing Workplace: The Employer's View, Panel on Secondary Education for the Changing Workplace, 1984.

There are common themes which tie the major reform proposals together. They call for an emphasis on basic skills, increased academic preparation, and a more restricted and rigorous curriculum in the secondary schools. The need for a restructured teacher education system to prepare teachers for the new educational agenda is also a clear priority. According to Feistritzer (1984), "Nothing in American education is in greater need of reform than the way we educate and certify classroom teachers."

While each of the reports is critical of the operation and outcomes of American education, the initial concern was derived from the perceived inability of the nation to respond effectively to domestic and international problems. Ultimately, if

educational reform is to be successful, those problems must be addressed in significant ways.

STATUS OF VOCATIONAL EDUCATION IN THE REFORM MOVEMENT

Vocational educators are justifiable concerned about the effects of reform on their programs. On one hand is the suggestion that vocational education is under severe attack from the reform movement and the result will be the destruction of vocational education and vocational teacher education (the Vocational Education Journal, May, 1987). Others suggest that many reform reports were developed with little recognition of vocational education (Copa et al., 1986). It is difficult to directly determine if the recommendations in many of the studies were intended to include or apply to vocational education.

An analysis of the initial studies of educational reform makes it apparent that key elements of the reform proposals are quite compatible with the goals of vocational education. Improvements in economic effectiveness and business productivity are at the heart of vocational education philosophy. A review of federal vocational legislation and vocational education curriculums demonstrates the continuing attention devoted to solving some of the significant economic and social problems facing the country. Vocational education programs have demonstrated a responsiveness to the special needs of students, to integrating people into society through effective employment skills, and have devoted attention to personal and interpersonal development. All of these strategies, if effective, are directed at reducing critical economic and social problems.

Vocational education has the potential of contributing to the solution of the underlying problems. While vocational education may not have been specifically identified and addressed in each of the reports, many recommended reforms of are consistent with the purposes and goals of vocational education. With that compatibility, vocational education can participate in the reform efforts and contribute meaningfully to achieving the outcomes of reform.

VOCATIONAL TEACHER EDUCATION AND REFORM

Vocational teacher education has historically operated cooperatively but uniquely with other teacher education programs at many colleges and universities. The uniqueness resulted from factors such as differing certification requirements, emphasis on technical preparation and business/industry work experience, the number of people entering vocational teaching and teacher education programs through nontraditional routes, and the frequent use of inservice components for the delivery of vocational teacher education.

The historic emphasis on inservice education has been significant in defining the delivery of vocational teacher education. Often vocational teachers have been employed in schools directly from industry without first completing a teacher preparation program and, in some cases, without any collegiate preparation. A provisional certification to teach would be issued until they completed a set of prescribed education courses. Those courses were offered by vocational teacher

educators, often using nontraditional field-based delivery systems.

Because the practice of employing persons from business/ industry was widespread as vocational education programs expanded in the public schools, the need for inservice education was great. Many teacher educators were viewed as itinerant teachers who spent the majority of their time delivering courses and providing a broad range of professional services to provisionally certified teachers, and who had only limited additional faculty responsibilities at their employing institution. Some teacher education programs were actually offered through state departments of education rather than a university or college.

Because of the mismatch of supply and demand for vocational education teachers, many state departments of education provide specific funding to higher education institutions to provide vocational teacher education services. That funding relationship and the inservice-based program structure often resulted in vocational teacher education positions and programs being administered separately and uniquely from other teacher education programs in the college/university.

The federal legislative initiatives for vocational education beginning with the Smith-Hughes Act in 1917 have also had a direct impact on the development and delivery of vocational teacher education and the roles and responsibilities of vocational teacher educators. Those initiatives have influenced the development of competency based curriculum, the emphasis on providing vocational education for students with special

educational needs, attention to program evaluation and follow up of students enrolled in vocational education, and other major vocational education initiatives. The legislative priorities have typically been incorporated into vocational teacher education courses and curricula and have directly influenced the research and development activities of vocational teacher education.

The unique philosophy, structure, and delivery of vocational teacher education has resulted in varying views of the administration of programs. In some instances vocational teacher education is considered to be a part of the total teacher education curriculum. At other times it is treated as a distinct program.

In the case of the current reform reports vocational education and vocational teacher education are not specifically addressed in most studies. For example, an assessment of the curriculum content of teaching majors in selected colleges and universities specifically noted the absence of vocational teaching majors from the analysis (Southern Region Education Board, 1985). The original report of the Holmes Group (1986) did not address vocational teacher education other than to suggest the need for study of issues that impact on vocational education. When there is the lack of identification, assumptions can be made that the studies apply to all components of education including vocational education, that vocational education was not recognized or understood so was not included, or that the

uniqueness of vocational education/teacher education was recognized and separate study was required.

THE FUTURE OF VOCATIONAL TEACHER EDUCATION

Despite the inattention, the maturity of vocational education and vocational teacher education, the requirements for reform placed on faculty in colleges and universities, and the importance of the educational reform movements demand that vocational teacher education respond to the proposals for reform in a way that demonstrates its commitment to quality teacher education. That response can accomodate the unique qualities of vocational teacher education. It can also recognize the historic leadership vocational teacher education has provided in implementing several strategies which have been recommended within reform reports. Current evidence does not suggest a single solution requiring a lockstep response to the preparation of vocational education teachers.

THE PHILOSOPHY GUIDING REFORM

The reform of teacher education is predicated on the goals of educational improvement. Teacher education exists to improve the practice of education through research and personnel development. While there may be secondary objectives for reform, its primary focus must be on the outcomes of education.

While the recommendations of the Holmes Group have received the majority of attention in the redesign of teacher education, the purposes of the group's redesign efforts must be critically assessed. One paramount goal has been to increase the professionalization of teaching and the respect given to teacher

education (Case et al. 1986) While certainly laudable, such a goal should be evaluated in relationship to the primary needs of reform which relate to the outcomes of education. It is likely the goals are complementary and carefully designed efforts to restructure the teaching profession and preparation for the profession can also result in higher quality education. It is possible, however, to focus actions and resources on the goal of professionalization assuming quality education will result or without considering the impact on educational outcomes.

PROPOSALS FOR THE REFORM OF TEACHER EDUCATION

The Holmes Group (1986) and the Carnegie Commission (1986) proposals center on the restructuring of teacher education. They emphasize strategies for increasing the quality of teachers and teaching and increasing the status of the teaching profession.

The Holmes proposal establishes five major goals to guide the improvement of teacher education. They are:

1. To make the education of teachers intellectually sound. Achieving the goal requires a broad liberal education, competence in the subject matter to be taught, effective pedagogy, and reflective practice.

2. To recognize differences in knowledge, skill, and commitment among teachers. The Holmes proposal recommends a three-level differentiated staffing structure including instructors, professional teachers, and career professional teachers.

3. To create honest standards of entry into the profession of teaching. To achieve this objective, it is recommended that

professional teacher examinations be established that use multiple measures of critical knowledges and skills.

4. To connect schools of education with schools. Working partnerships between schools and universities, between teachers, administrators, and college faculty can aid in maintaining those connections.

5. To make schools better places in which teachers can work and learn. The Holmes Group believes that the increased professionalism and competence will require a new working and administrative environment in schools.

The Carnegie Report (1986), A Nation Prepared, provides a similar conception of the teaching profession. Recommendations include a National Board of Professional Teaching Standards, a differentiated staffing pattern in schools headed by lead teachers, and upgrading the status of teachers through increased compensation, support staff, and greater authority and responsibility for instruction and the achievement of students.

APPLICATIONS OF REFORM PROPOSALS WITHIN VOCATIONAL TEACHER EDUCATION

Even though vocational teacher education is not specifically examined in either the Holmes or Carnegie studies, the recommendations and implications of the studies have applications. The following examples illustrate modifications of specific study recommendations to reflect vocational education applications.

1. Vocational teachers should have a sound intellectual base including a strong preparation in liberal studies and academic skills.

2. Differences in the knowledge, skills, and commitment of vocational teachers should be recognized in both work assignment and certification levels.

3. Standards of entry into vocational education teaching should include educational requirements and professional testing that are intellectually challenging and relevant to the specific requirements of vocational education teaching.

4. A differentiated staffing pattern of vocational teachers should be established.

5. The vocational education teacher preparation curriculum should allow students to study the subjects they will teach with instructors who are effective teaching models and who understand the pedagogy related to those subjects.

6. The curriculum should include significant study of the content which will be taught with generic education courses replaced by subject matter oriented studies of teaching and learning.

7. Vocational teachers should meet the common standards established by a national teacher certification board and the additional specific requirements unique to vocational education.

8. Lead teachers should be identified in vocational education to provide leadership in teaching and learning for their vocational education colleagues and within the entire school.

9. Efforts to prepare the most qualified persons for vocational teaching should include special attention to recruiting and retaining persons from ethnic and racial minority groups.

10. Incentives should be provided for vocational education teachers based on school-wide student performance measures related to important educational and vocational education outcomes.

11. A supportive teaching and learning environment should be provided including appropriate technology, facilities, services, and support staff essential for faculty and student productivity.

12. The compensation and working conditions of vocational education teachers should be consistent with that of other teachers and competitive with comparable positions for which they are qualified in business and industry.

THE DESIGN OF ALTERNATIVE MODELS

The design of vocational teacher education delivery models can be viewed historically as an evolutionary process. It is clear that the curriulum and delivery methods used in vocational teacher education are not the same as those used 50 years or even 10 years ago. They have been modified as the result of several factors including new knowledge, evaluation of procedures, response to internal and external factors, and the philosophies and preferences of vocational teacher educators.

In contrast, the current calls for major revisons in the design and delivery of téacher education may appear to be revolutionary. The evidence on which the need for change is

based is strong and there is general agreement on basic elements of that change. However, there does not seem to be the clear evidence to support an exclusive design for the delivery of vocational teacher education. In an analysis of research needs for vocational teacher education, Lynch (1988) concluded, "the popular contentions about teacher education programs...are usually based on suppositions, worse-case perceptions, and sparce and shallow data." (p. 96) While there is both pressure to and need for change, that change should proceed within a carefully conceived plan to achieve the goal of significant improvement in the delivery and outcomes of vocational education.

Without clear evidence to support one best strategy, restructuring of vocational teacher education should be based on the critical philosophy of the profession as well as the best evidence of effective practice, and directed toward achieving the important outcomes of education as effectively and efficiently as possible. Then, with the implementation of new delivery models, research and evaluation must be undertaken to determine the appropriateness and effectiveness of each. As research results become available, additional refinement and strengthening of models can occur.

Based on that concept of reform, this paper presents the structure for three alternative delivery models for vocational teacher education. The three models are (1) a post-baccalaureate model, (2) a restructured baccalaureate model, and (3) a field-based model for recruiting and infusing non-traditional vocational teachers. The models are proposed as general

structures which appear to be consistent with the current directions for change occuring in vocational teacher education programs, can accomodate the goals of reform, and can be realistically implemented using available resources in vocational education and vocational teacher education.

Several components are implicit in each of the models that appear to be critical in maintaining the essential identity and philosophy of vocational education and in achieving the key goals of educational reform. Those components are:

1. The curriculum provides a balanced offering of liberal studies, technical preparation, and pedagogy of the same depth and quality as other degree programs offered by the college/university at the same level.

2. While in the program, students have continuing exposure to and experience with effective practices in schools and in business/industry with opportunities for reflection and refinement of skills.

3. Successful completion of the vocational teacher education curriculum will, at a minimum, qualify the graduate for a baccalaureate degree and for certification as a non-tenured teacher.

4. The vocational teacher education program meets or exceeds standards as established by all agencies with accrediting jurisdiction for the curriculum.

5. The curriculum contains a balance of theory and practice in both pedagogy and in the technical content of the appropriate occupational discipline.

6. The curriculum is designed and managed by persons who are qualified academically for appointment to the college/ university faculty. Instruction is provided as appropriate by teacher education faculty, faculty from academic units responsible for liberal studies and for relevant technical/professional studies, and current practitioners who serve as "clinical professors" in schools and in business/ industry.

7. A differentiated staffing pattern for teachers will be implemented in schools to recognized differences in preparation, experience, competence, and responsibilities. A four-level model is recommended for vocational education. The four levels are non-tenured teacher, tenured teacher, master teacher, and lead teacher.

Non-Tenured Teacher. Teachers entering the profession with no experience and minimum competence would be non-tenured teachers. The category would also provide temporary certification for persons with unique expertise needed in instructional roles for a limited time (technical/laboratory instructors), and those completing full-time internships as the final component of a teacher education program. The non-tenured teacher would work under the close supervision of a master or lead teacher and would successfully complete a professional development plan and evaluation by a professional certification board to receive tenure.

Tenured Teacher. The tenured teachers represent the vast majority of teachers in schools. They would have at least a baccalaureate degree in the subject area in which they are certified. They meet all requirements of the professional certification board and will have completed a designated number of years of teaching.

Master Teacher. The Master Teacher is the third tier of teachers and they are considered the senior members of the faculty. These teachers will have extensive teaching experience and will have demonstrated exceptional mastery of the broad set of pedagogical competencies. The Master Teacher would typically hold at least the master's degree. Master teachers would serve as clinical professors for students in teacher education programs and mentors for non-tenured teachers as well as conduct field-based research and test innovative teaching strategies.

Lead Teacher. The lead teacher is the fourth tier of professional teachers and can be compared to the career professional in the Holmes model of differentiated staffing. The lead teachers should be selected from the cadre of Master Teachers by the other teachers in the particular discipline. They would have broad planning, supervision, and evaluation responsibilities in the specific program area and would participate in the leadership of the school.

BASIC BELIEFS GUIDING THE DEVELOPMENT OF ALTERNATIVE MODELS

Based on extensive experience in and study of vocational education and vocational teacher education, the authors of this paper have developed three models for the delivery of teacher

education. A set of ten basic beliefs were developed from the research which may lend perspective to the analysis of the proposed models.

1. Vocational teacher education encompasses a number of teacher preparation programs with unique technical content requirements but with the common focus of preparing teachers skilled in the design and delivery of vocational education.

2. There are unique qualities and requirements for vocational education personnel that should be recognized in any delivery model.

3. There is an identifiable knowledge base for vocational teacher education that must be incorporated into all delivery models.

4. There are critical processes that must exist in all models of vocational teacher education that are drawn from the philosophy and knowledge base of vocational education and teacher education.

5. There is a need for flexibility and variation in the delivery of vocational teacher education that allows response to state, institutional, and student characteristics and needs. Particular attention should be given to the development of models which will meet the demand for vocational education teachers with qualified personnel prepared through vocational teacher education programs.

6. The design of vocational teacher education models should draw on the experience of the profession with competency-based

education, alternative delivery systems, field-based teacher education, and broad-based recruitment strategies.

7. Vocational teacher education delivery systems should be designed to attract and retain potentially successful teachers from a variety of sources with particular emphasis given to the identification of minority candidates and persons with recent business/industry experience.

8. Vocational education teachers and teacher educators must demonstrate competence through appropriate testing in academic and basic skills, pedagogy, planning and managing vocational education, and relevant technical skills.

9. The delivery of effective vocational education requires a complex set of knowledge and skills which cannot be mastered in a short time. A differentiated staffing pattern in vocational education allows the participation of people with specific skills and the opportunity for them to advance professionally as they increase their knowledge and skills as a vocational educator.

10. Strutures for vocational teacher education should be most responsive to achieving appropriate education and vocational education outcomes rather than to the goals of any specific educational reform report.

A POST-BACCALAUREATE MODEL

The basic structure of a post-baccalaureate model for vocational teacher preparation is generally consistent with the philosophy of the Holmes group. Teacher preparation would be provided to persons who had completed a baccalaureate degree in the academic area in which they were preparing to teach. The

teacher education program would be administered at the postbaccalaureate level and would consist of an intensive study of teaching combined with significant, reflective practice. The essential structural components of the programs are:

Admission Requirements

Prior to acceptance into a vocational teacher education curriculum the student will have completed a baccalaureate degree with a professional/technical major related to a vocational education certification area. Admissions standards/testing is used to evaluate the quality of academic preparation, technical competence, and qualification for graduate study.

Business/Industry Experience

Prior to completing the vocational teacher education curriculum, the student will document recent work experience in business/industry in an occupation related to a vocational education certification area and/or will have participated in an extensive business internship.

Academic Level of the Program

All teacher education courses will be delivered at the post-baccalaureate level with the exception of a limited introduction/exploration of teaching and survey-type field experiences that would be helpful in career planning.

Curriculum

The post-baccalaureate curriculum will support an intensive, rigorous study of the philosophy and principles of education and vocational education, pedagogy, and the relationship of pedagogy to the subject matter to be taught.

Rather than concentrating exclusively on the development of specific pedagogical knowledge and competencies, the concentrated teacher education curriculum will support the study of teaching/learning processes and models related to vocational education and to the technical subject matter. The goal is to prepare professional educators who can create more effective forms of vocational instruction rather than to develop teachers with a specific set of instructional skills.

Field Experience

The early part of the post-baccaulareate experience (approximately one year) will combine carefully structured and sequenced observations and experience in the schools with full time study and reflection. The final part of the teacher education experience (a second year) is designed to integrate the teacher into the school and the beginning teaching role with a systematic and progressive sequence of teaching exeriences followed by evaluation and skill refinement.

Administration

The teacher education program is managed through a college or university committed to vocational teacher education with extensive involvement of the faculty of schools offering comprehensive, quality vocational education programs. The curriculum will be planned and instruction/supervision will be provided through cooperative efforts involving teacher educators, expert teachers, school administrators, and business people.

Placement

At the end of the postbacculareate program, with successful completion of requirements, and certification in a vocational education subject area, the teacher would be prepared to move through a shortened probationary period into a tenured teaching position.

A RESTRUCTURED BACCALAUREATE MODEL

Currently, most teachers entering vocational education do so with a baccalaureate degree with some (particularly in the trade and technical areas) beginning teaching without a four-year degree. Teacher eduction programs and resources are concentrated at the undergraduate level and certification requirements for beginning teachers traditionally require the baccaulareate degree. Given that status and the continuing debate regarding the need for postbaccalaureate preparation for the non-tenured teacher, a restructured four-year program is an appropriate, testable model for the delivery of vocational teacher education.

To meet the challenges of reform and maintain a four-year program, several structural changes will be necessary that may be significantly different from current practice in most programs. Those changes are:

1. A strong commitment from the total institution to prepare vocational education teachers through an effective, integrated four-year program.

2. Carefully developed admission standards for the program which evaluate students' academic capabilities to master the knowledge and skills required of the professional vocational

educator. Admission is made at the beginning of the four-year curriculum with a continuing evaluation process as the student progresses through the program. Because of the sequential and cohesive nature of the restructured curriculum it would be inappropriate for students to enter the curriculum at a mid-point.

3. A restructured liberal studies curriculum providing the intellectual background required of professional educators through a coherent, sequenced program rather than a traditional collection of independent courses.

4. Access to a comprehensive, technical preparation in the subject matter which the vocational educator is preparing to teach. That preparation should be of the same depth and breadth as an equivalent academic major, but will require cooperative planning and scheduling between vocational teacher education faculty and the faculty of the technical discipline.

5. A restructured education curriculum which integrates the study of pedagogical and vocational philosophy and methodology with subject matter specialization and field experience. Such restructuring will require a careful assessment of the critical pedagogical requirements of the beginning vocational education teacher and the design of an integrated, efficient education curriculum rather than maintaining offering a set of specialized education and vocational education courses.

5. Carefully designed, supervised, and sequenced observations and practicuums in schools. Those experiences will extend from the beginning of the curriculum through its

conclusion and are coordinated with the study of pedagogy. This will allow the prospective teacher continuing opportunities for application, evaluation, and reflection as knowledge and skills develop. The experiences would be jointly planned and managed by vocational teacher educators and "clinical professors" who are master teachers in the schools.

6. Extended part-time work experience or intensive internships in business/industry which help students to apply technical skills and to refine a philosphy of work and vocational education. A unique element of vocational teacher preparation is practical job experience. Innovative, more efficient methods of attaining that experience will be required in a four-year teacher preparation program.

7. A culminating, one-semester teaching internship in a vocational education program that is jointly planned and implemented by the teacher education institution and the school. The student will intern with a master teacher who has effective mentoring skills and who is an active participant in the the vocational teacher education program as a "clinical professor."

8. Upon completion of the baccaulareate program, the student would be credentialed as a non-tenured teacher. The employing school would be responsible for administering a comprehensive probationary program to successfully integrate the beginning teacher into the professional responsibilities.

A FIELD-BASED MODEL

A solid blend of theory and practice, an effective training system, and continuing support for new teachers are essential

elements of teacher preparation whether it is provided by a university, a local education agency or a partnership of the two (McKibbin 1988). Collaboration with state and local education agencies in teacher preparation has been a hallmark of vocational teacher education. As we near the 21st century, the redesign of teacher education will require even more effective collaboration extending it across academic disciplines and to others who can contribute to achieving the goals of educational reform.

Teacher education reform recommendations have emphasized improved academic and liberal studies preparation for teachers. To achieve that goal, over twenty states have implemented strategies to identify prospective teachers from an alternative source--persons with academic degrees who have not completed a teacher preparation curriculum. Efficiently infusing those people into teaching while maintaining a commitment to effective pedagogical skills requires a unique delivery system.

A core goal of vocational education is to prepare people for effective employment by developing general and specific job skills. Historically, that has resulted in a requirement that vocational education teachers have significant experience in business/industry in order to document the needed technical competence. That commitment to occupational experience has been so strong that, coupled with a demand for vocational teachers which was not satisfied through traditional teacher education programs, prospective teachers have been regularly recruited from business/industry. Vocational teacher education has been directly involved in the design and delivery of educational

services for that nontraditional population. Those activities provide a base of experience in the development of effective field-based teacher education programs.

This section will address approaches and methodologies that are applicable to a field-based delivery system including a core curriculum, national competency examination, computer-based competency modules, and instructional technology including videodisc and video teleconferencing.

Purpose

The field-based model is designed specifically for prospective teachers who are entering vocational education teaching without completing a teacher education program. Typically those people have at least a baccaulaureate degree and extensive occupational experience; however, particularly in trade and industrial education programs, people have entered teaching without a baccalaureate degree. The field-based program would allow people with specific skills which qualify them for non-tenured teaching appointments to develop the pedagogical skills necessary to achieve full certification and tenure.

Requirements for Participation

Admission requirements into the field based program would include: (1) probationary employment as a vocational education teacher; (2) documentation of business/industry employment experience and successful completion of an appropriate technical competency test; (3) completion of an appropriate baccalaureate degree or (when appropriate) completion of matriculation requirements in a vocational teacher education program.

Program Structure

The design of the field-based program is critical to its success. It requires an extensive and continuing commitment to professional development from a teacher education program and the employing school. Content, instructional resources, delivery of instruction, mentoring, and evaluation are critical to the successful development of the non-tenured teacher.

The employing school must provide the structure, time, and resources for a clinical environment. The teacher education program must develop administrative structures, curriculum, instructional technology, supervision and evaluation strategies. An instructional team of vocational teacher education faculty and master teachers serving as clinical professors will be required to cooperatively plan and implement a field-based teacher education program.

Curriculum

The curriculum for the field based model must respond to the immediate as well as the long-term needs of the non-tenured teacher. Critical pedagogical skills needed by the beginning teacher are developed through an initial core curriculum. According to McKibbin (1988) several states including New Jersey, Texas, Georgia, and California, that are using an alternative certification strategy have identified basic elements of the core curriculum. The core focuses on competencies related to (1) teaching and learning processes, classroom management, behavior control and student diagnosis; (2) curriculum development and instructional techniques; (3) planning the classroom environment;

(4) working with parents; (5) language development; and (6)ts multicultural education. After completing the core curriculum, the non-tenured teacher will be given a formal evaluation to certify competence in the basic pedagogical knowledge and skills.

Prior to completing the core curriculum, the non-tenured teacher should be used in non-instructional roles or complete only limited instruction under the direct supervision of a master teacher. Upon verification of core competency, the non-tenured teacher can assume a broader set of instructional responsibilities while completing the advanced teacher education curriculum. As the non-tenured teacher progresses beyond the core, continuing supervision and support of teacher educators and clinical professors will be an integral part of the program.

Instructional Components

Computer-based Competency Modules (CBCM). Performance-Based Teacher Education (PBTE) modules have been used for over two decades in vocational education. The PBTE modules were developed by the National Center for Research in Vocational Education (1974) and were based on the vocational teacher education competency research of Cotrell (1972). Each module is designed to integrate theory and practice with terminal objectives that use criterion referenced assessment. The modules are grouped within 13 categories of teacher performance: program planning, development, and evaluation; instructional planning; instructional execution; instructional evaluation; instructional management; guidance; school-community relations; vocational student organizations; professional role and development;

coordination of cooperative education; implementing competency-based education; serving students with special/exceptional needs; and assisting students in improving their basic skills.

Developing a computerized version of the PBTE system will allow flexible delivery of the curriculum so non-tenured teachers can efficiently develop critical competencies for effective teaching. In the field-based setting, advantages of CBCM would be: (1) the capacity for making quick diagnostic and prescriptive instructional decisions, (2) when students make wrong decisions they will get appropriate feedback about the consequences without the dangers and costs associated with actual conditions; (3) effective design can divide materials into single concepts interspersed with questions to test comprehension, (4) an interactive or question-feedback sequence provides user alternatives, (5) instructional management systems provide data on the progress of individual learners, and (6) it allows effective time management for both instructor and learner.

Videodisc and Video Teleconferencing. Video disc and video teleconferencing have become integral components of corporate training. In 1986, more than 8,000 companies and other organizations spent $2.3 billion to produce video-based instruction for their employees; by 1990, the amount is expected to exceed $7 billion. The advances in computer-managed video disc technology make it an unusually flexible and effective instructional resource. Video conferencing through satellite delivery allows interactive instruction in a variety of locations.

Those technologies are being increasingly used in education and can become an important part of the delivery of field-based vocational teacher education. The use allows flexibility of delivery and individualization of instruction. Video formats are effective in remediation and review as well as providing opportunities for learners to videotape performance for self-review and critique and for competency evaluation.

Competency Examinations

A key element of the reform recommendations for teacher education is certification through testing. Occupational competency testing has been administered in selected vocational education occupational areas through the National Occupational Competency Testing Institute (NOCTI). That competency testing strategy will need to be extended to all vocational areas and across the range of competencies required for certification as a tenured vocational education teacher. An appropriate competency testing procedure developed and adminstered by a national certification board is necessary to verify the effectiveness of a field-based delivery method for vocational teacher education.

Effective competency testing provides the opportunity to meet an important need of nontraditional teachers entering vocational education without a baccaulaureate degree For states that allow persons without baccalaureate degrees to become non-tenured teachers, colleges and universities should consider policies and methods for using competency test results in meeting selected degree requirements. Appropriate academic credit would be awarded for the successful completion of competency tests

which measure knowledge and skills equivalent to competencies in the undergraduate curriculum.

CONCLUSION

Vocational teacher education, as with all teacher education, is challenged to implement a major reform in order to prepare teachers effectively. The need for reform is documented in the Holmes Group and Carnegie Reports and through legislative requirements in 46 states. That need for change does not mean that the profession has failed; it simply means that we must move expeditiously to correct those things which have not worked. Vocational education can no longer afford to employ teachers without the appropriate pedagogical skills and technical competencies.

Although many of the national studies have omitted vocational education from their findings, the field is not exempted from the impact of their implications. Vocational teacher education is challenged to move expeditiously to correct deficiencies. In retrospect, one only has to reflect for a moment to take notice of the metamorphisis of the economy and society that has propelled us toward that reformation. An effective response from vocational education will require a concerted effort to improve the quality of teaching. Collaboration among teacher education institutions, State education agencies, and local schools will be required to effectively implement new models for vocational teacher education.

Vocational teacher educators must raise standards and implement a policy of excellence in teaching. Appropriate, defensible standards for admission into teacher education and for vocational teacher certification must be established and maintained. Standards for maintaining excellence in teaching must be implemented. In doing so, the expectations of colleagues, students, and others for vocational education and vocational teacher education will increase as well. Implementing and enforcing change of this magnitude will not be easy, but it must be done to avoid the traditional pitfalls that have challenged vocational education. The words of John F. Kennedy are encouraging in the efforts to reform vocational teacher education. "All of this will not be finished in the first 1000 days...nor even perhaps in the next decade. But let us begin."

RECOMMENDATIONS

While this paper has outlined three models for the delivery of vocational teacher education, several critical activities must be undertaken to support the major efforts that will be required of vocational teacher education in meeting the challenges of reform. Those activities are identified in the following recommendations for national efforts.

For Practice:

1. Create an institute for leadership development in vocational eduction and teacher education. The institute could be patterned after Harvard's Institute of Education Management. The new initiatives and collaboration required of vocational education

will increase the need for a major education and training site for vocational education leadership.

2. Vocational education teacher educators and administrators must take an active role in recruiting, preparing, and supporting minorities to fill the full range of teaching, administrative, and teacher education roles in vocational education.

3. Strategies must be developed and standards enforced to require all vocational education teachers to obtain a baccalaureate degree and meet technical competency requirements before being employed as a tenured teacher. Those not meeting minimum requirements should be employed only in limited-scope instructional roles under the supervision a master vocational education teacher.

For Further Research:

1. Create a national commission under the auspices of the U.S. Department of Education to investigate alternative models for effective delivery of vocational teacher education. The commission should include department chairpersons and academic deans of vocational teacher education programs and state department of education personnel responsible for professional development and teacher certification. The commission should be designed and charged in a similar way to that of the Panel of Consultants on Vocational Education appointed by John F. Kennedy. The commission should evaluate data and commission research on alternative delivery models and components of those models.

2. The knowledge base of vocational education as identified in the Cotrell work should be reviewed, updated, and extended if

necessary to form a base for knowledge development and evaluation.

3. The feasibility of a differentiated staffing pattern for vocational education teachers as proposed in the Holmes and Carnegie reports should be studied.

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Vita =

Vita

Life

Vocational teaching alternatives can prepare teachers for lifelong learning experiences. The person in the logo represents the letter i, which means that vocational teaching alternatives are focused on the individual teacher in a wholistic approach, covering all aspects of an individual's professional life.

Vita

applications of reform proposals within vocational teacher education

Vocational teachers should have a sound intellectual base including a strong preparation in liberal studies and academic skills.

Differences in the knowledge, skills and commitment of vocational teachers should be recognized in both work assignment and certification levels.

Standards of entry into vocational education teaching should include educational requirements and professional testing that are intellectually challenging and relevant to the specific requirements of vocational education teaching.

A differentiated staffing pattern of vocational teachers should be established.

The vocational education teacher preparation curriculum should allow students to study the subjects they will teach with instructors who are effective teaching models and who understand the pedagogy related to those subjects.

The curriculum should include significant study of the content which will be taught with generic education courses replaced by subject matter oriented studies of teaching and learning.

Vita

Vocational teachers should meet the common standards established by a national teacher certification board and the additional specific requirements unique to vocational education.

Lead teachers should be identified in vocational education to provide leadership in teaching and learning for their vocational education colleagues and within the entire school.

Efforts to prepare the most qualified persons for vocational teaching should include special attention to recruiting and retaining persons from ethnic and racial minority groups.

Incentives should be provided for vocational education teachers based on school-wide student performance measures related to important educational and vocational education outcomes.

A supportive teaching and learning environment should be provided including appropriate technology, facilities, services, and support staff essential for faculty and student productivity.

The compensation and working conditions of vocational education teachers should be consistent with that of other teachers and competitive with comparable positions for which they are qualified in business and industry.

Vita

components implicit in each of the models

The curriculum provides a balanced offering of liberal studies, technical preparation and pedagogy of the same depth and quality as other degree programs offered by the college/university at the same level.

While in the program, students have continuing exposure to and experience with effective practices in schools and in business/industry with opportunities for reflection and refinement of skills.

Successful completion of the vocational teacher education curriculum will, at a minimum, qualify the graduate for a baccalaureate degree and for full certification as a non-tenured teacher.

The vocational teacher education program meets or exceeds standards as established by all agencies with accrediting jurisdiction for the curriculum.

components implicit in each of the models

The curriculum contains a balance of theory and practice in both pedagogy and in the technical content of the appropriate occupational discipline.

The curriculum is designed and managed by persons who are qualified academically for appointment to the college/university faculty. Instruction is provided as appropriate by teacher education faculty, faculty from academic units responsible for liberal studies and for relevant technical/professional studies, and current practitioners who serve as "clinical professors" in schools and in business/industry.

A differentiated staffing pattern for teachers will be implemented in schools to recognize differences in preparation, experience, competence and responsibilities. A four-level model is recommended for vocational education. The four levels are non-tenured teacher, tenured teacher, master teacher and lead teacher.

Vita

basic beliefs guiding the development of alternative models

Vocational teacher education encompasses a number of teacher preparation programs with unique technical content requirements but with the common focus of preparing teachers skilled in the design and delivery of vocational education.

There are unique qualities and requirements for vocational education personnel that should be recognized in any delivery model.

There is an identifiable knowledge base for vocational teacher education that must be incorporated into all delivery models.

There are critical processes that must exist in all models of vocational teacher education that are drawn from the philosophy and knowledge base of vocational education and teacher education.

Vita

basic beliefs guiding the development of alternative models

There is a need for flexibility and variation in the delivery of vocational teacher education that allows response to state, institutional, and student characteristics and needs. Particular attention should be given to the development of models which will meet the demand for vocational education teachers with qualified personnel prepared through vocational teacher education programs.

The design of vocational teacher education models should draw on the experience of the profession with competency-based education, alternative delivery systems, field-based teacher education and broad-based recruitment strategies.

Vocational teacher education delivery systems should be designed to attract and retain potentially successful teachers from a variety of sources with particular emphasis given to the identification of minority candidates and persons with recent business/industry experience.

Vocational education teachers and teacher educators must demonstrate competence through appropriate testing in academic and basic skills, pedagogy, planning and managing vocational education, and relevant technical skills.

The delivery of effective vocational education requires a complex set of knowledge and skills which cannot be mastered in a short time. A differentiated staffing pattern in vocational education allows the participation of people with specific skills and the opportunity for them to advance professionally as they increase their knowledge and skills as a vocational educator.

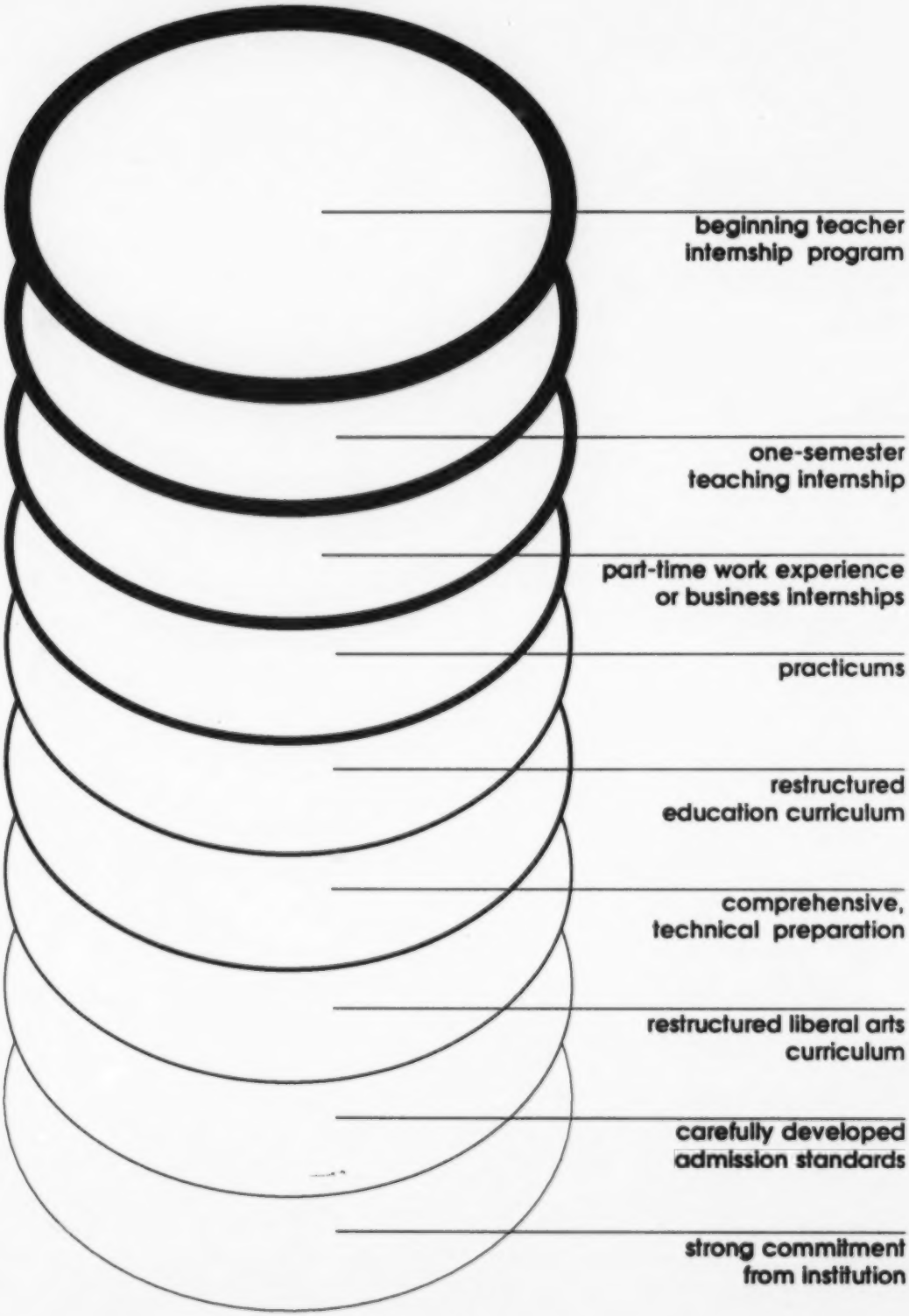
Structures for vocational teacher education should be most responsive to achieving appropriate education and vocational education outcomes rather than to the goals of any specific educational reform report.

post baccalaureate model

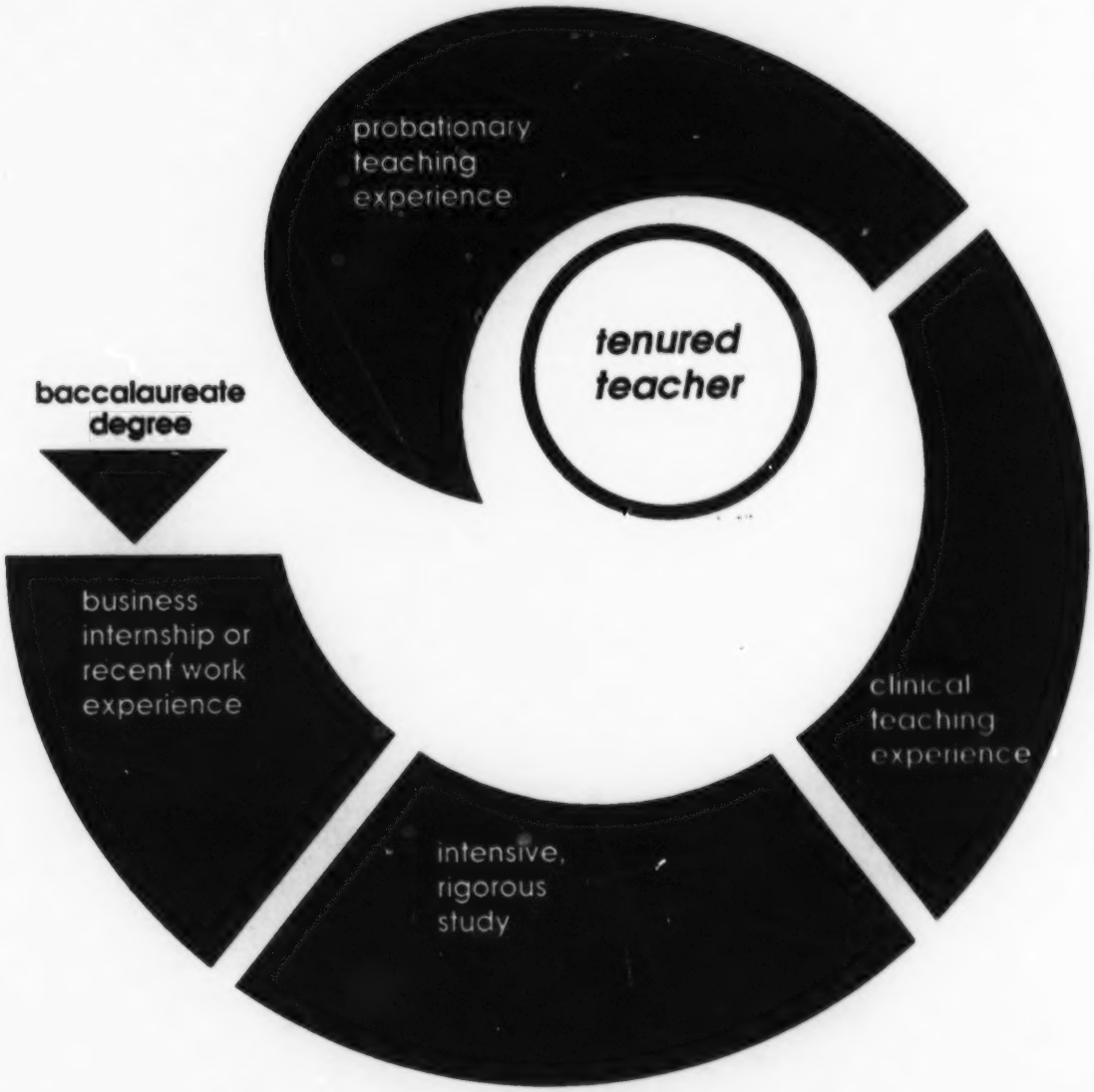
a restructured baccalaureate model

a field based model

A RESTRUCTURED BACCALARUEATE MODEL



A POST-BACCALAUEATE MODEL



FIELD-BASED MODEL